

PATENT COOPERATION TREATY

From the
INTERNATIONAL SEARCHING AUTHORITY

To:

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PCT

WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY

(PCT Rule 43bis.1)

Date of mailing
(day/month/year)

25-05-2005

Applicant's or agent's file reference

110112801SLE

FOR FURTHER ACTION

See paragraph 2 below

International application No.

PCT/SE2005/000230

International filing date (day/month/year)

18.02.2005

Priority date (day/month/year)

19.02.2004

International Patent Classification (IPC) or both national classification and IPC

G06F 17/60, G06F 12/14, G06K 19/10, H04L 9/32

Applicant

CYPAK AB et al

1. This opinion contains indications relating to the following items:

- ☒ Box No. I Basis of the opinion
- ☒ Box No. II Priority
- ☐ Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- ☐ Box No. IV Lack of unity of invention
- ☒ Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- ☐ Box No. VI Certain documents cited
- ☐ Box No. VII Certain defects in the international application
- ☐ Box No. VIII Certain observations on the international application

2. FURTHER ACTION

If a demand for international preliminary examination is made, this opinion will be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA") except that this does not apply where the applicant chooses an Authority other than this one to be IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1bis(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of 3 months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

For further opinions, see Form PCT/ISA/220.

3. For further details, see notes to Form PCT/ISA/220.

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Box No. I Basis of this opinion

1. With regard to the **language**, this opinion has been established on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.

☐ This opinion has been established on the basis of a translation from the original language into the following language, _____, which is the language of a translation furnished for the purposes of international search (under Rules 12.3 and 23.1(b)).

2. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application and necessary to the claimed invention, this opinion has been established on the basis of:

a. type of material

- ☐ a sequence listing
☐ table(s) related to the sequence listing

b. format of material

- ☐ in written format
☐ in computer readable form

c. time of filing/furnishing

- ☐ contained in the international application as filed.
☐ filed together with the international application in computer readable form.
☐ furnished subsequently to this Authority for the purposes of search.

3. ☐ In addition, in the case that more than one version or copy of a sequence listing and/or table relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.

4. Additional comments:

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Box No. II Priority

1. ☒ The following document has not yet been furnished:

☒ copy of the earlier application whose priority has been claimed (Rules 43*bis*.1 and 66.7(a)).

☐ translation of the earlier application whose priority has been claimed (Rules 43*bis*.1 and 66.7(b)).

Consequently it has not been possible to consider the validity of the priority claim. This opinion has nevertheless been established on the assumption that the relevant date is the claimed priority date.

2. ☐ This opinion has been established as if no priority had been claimed due to the fact that the priority claim has been found invalid (Rules 43*bis*.1 and 64.1). Thus for the purposes of this opinion, the international filing date indicated above is considered to be the relevant date.

3. Additional observations, if necessary:

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Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Claims	<u>2-12, 14-18</u>	YES
	Claims	<u>1, 13</u>	NO
Inventive step (IS)	Claims	<u></u>	YES
	Claims	<u>1-18</u>	NO
Industrial applicability (IA)	Claims	<u>1-18</u>	YES
	Claims	<u></u>	NO

2. Citations and explanations:

The object of the present invention resides in providing a communication between a remote item in a chain of logistics and a host computer via a data network which ensures the identity, authenticity, integrity and confidentiality of collected information.

The solution of the object is based on an item which is attached to a product subjected to a chain of logistics. The item comprises an electronic module including a unique identity identifying each item individually and a non-retrievable cryptographic key and the host computer is storing the corresponding identity and cryptographic key. The electronic module stores collected data related to the product or use of the product in a non-volatile memory and a cryptographic operation is performed on the collected data when exchanged between the item and the host computer in order to ensure identity, authenticity, integrity and confidentiality of the collected data. The information collected by the item can be generated by sensors integrated or attached to the product.

The following documents are cited in the International search Report:

D1) WO 0028508 A2
D2) US 5117096 A
D3) WO 2004006165 A1
D4) US5959568 A

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Supplemental Box

In case the space in any of the preceding boxes is not sufficient.
Continuation of: BOX V

Document D1 relates to systems for marking objects, and more particularly such systems which include electronic means for holding and attaching digital documents to an object to be marked, and methods for secure interface with the object. A product is marked with an electronic device attached to the product. The device includes an input/output channel for accepting an inquiry and for answering with the marking information stored in the device. Each marking device is devised to include a unique identity, which may include, a unique public/private key pair embedded in the device. The unique identity may be contained in a certificate. According to another aspect, the marking device may hold three types of digital documents that define its operation: a certificate to identify the device, one or more permits to define permissible operations and relevant parameters, and one or more permits from certified authorities that the marking device operates according to predefined rules and a required standard. A permit is a digital document issued and signed by an entity having a unique identification, the document including some piece of information. The certificate 251 is a digital document that may be signed with a private key associated with a known public key, the document linking the identification of the marking device with that public key. In another implementation, the document may be encrypted with the private key. A digital signature or encryption may be implemented as known in the art. The device 2 includes means for creating an encryption key pair comprising a public and a private key. The private key is written into the internal memory of device 2 and is not available outside. The public key is sent out, to be encrypted or signed digitally by an outside authority like a manufacturer, importer, a government agency or another certificate-issuing authority. The resulting digital document or certificate is transferred back to device 2 and is written therein as part of its identification

Document D1 shows an item attached to a product and a method for collection/interchange of data and for communication with a host, wherein said item comprises an electronic module including a unique identity identifying each item individually and a non-retrievable cryptographic key and the

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host is storing the corresponding identity and cryptographic key. The electronic module stores collected data related to the product or use of the product in a non-volatile memory and a cryptographic operation is performed on the collected data when exchanged between the item and the host. Consequently, the subject matter of claims 1 and 13 is previously known and therefore lacks novelty.

Document D1 fails to mention that sensors are applied to the product in a way that the electronic module can receive, store and process data generated by the sensors.

Document D2 relates to a control system for supervising goods distribution. The control system uses an identification device attached to the distributed goods, or their transport container incorporating a programmable memory storing the type of goods and their target destination and cooperating with an active memory card for exchange of data. The identification device incorporates a control processor coupled to sensors for identifying and displaying the momentary condition of the distribution process, with an evaluation device having a memory card interface allowing evaluation of the transferred data.

A man skilled in the art being confronted with the problem that involve communication between a remote item in a chain of logistics and a host computer via a data network which ensures the identity, authenticity, integrity and confidentiality of collected information and at the same time said item being capable of collecting and storing information generated by sensor, would begin with the knowledge of document D1, which is regarded as being the closest prior art, in order to create an item to claim 1. After that, he would bring the knowledge of document D2 in order to apply sensors to the product disclosed in D1. In doing so, an item attached to a product will receive, store and process data generated by the sensors.

Therefore, what is claimed in claim 2 and 12 is considered to lack an inventive step

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Furthermore, some of the further features added in claims 3-11 and 14-18 are not explicit in D1 or D2, but it does not seem that any surprising technical effect is obtained by these additions. If it can be shown that some aspect covered by these claims provides unexpected effects and the claims are restricted accordingly, the judgement may be reconsidered. Until these conditions are met, claims 3-11 and 14-18 are not considered to involve an inventive step.

Documents D3 and D4 show only the general state of the art.

The invention is industrially applicable.